

Iowa CONSERVATION Showcase

Special Project Clears Invasive Eastern Red Cedars

Western Iowa features one of Iowa's most unique landscapes—the rolling Loess Hills prairie. The rare native species found in these hilltop prairies, however, are endangered by the encroachment of eastern red cedar trees that spread rapidly, cover and shade out native plants and grasses. The loss of these native plants and expansive growths of the cedars has left the loose, crumbly loess soil susceptible to erosion.

But thanks to cost-share programs such as the **Wildlife Habitat Incentives Program (WHIP)**, administered by the U.S. Department of Agriculture's Natural Resources Conservation Service (NRCS), residents who own land in the Loess Hills are receiving funding assistance to clear eastern red cedar trees and bring back the native plants and grasses that protect the hills from erosion and attract wildlife.

Clearing the trees also restores the grazing value to the areas livestock producers.

The Loess Hills feature the largest tracts of remaining prairie in Iowa. Loess (pronounced "luss"), is German for loose or crumbly. Why have eastern red cedars invaded this unique area? Marty Adkins, assistant state conservationist for NRCS in Iowa, says the prairie burned naturally on a periodic basis during pre-European settlement times. Development, however, changed the ecosystem. "If you have unnatural fire suppression, invasive species will come into play," he said. "That is what has happened in the Loess Hills."

Grant Center WHIP Special Project

Steve Longlee of Hornick, Iowa, is one of 15 landowners in Monona County to receive cost-share funds through the Grant Center Special Landscape Area WHIP



Steve Longlee crops the bottom ground, and he is trying to keep the invasive cedar trees out of the Loess Hills prairie. The hills in the back left have been cleared, but the hills to the right have not.

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Special Project. The three-year project provided landowners in a targeted area of Monona and Woodbury County more than \$200,000 to clear 1,145 acres of trees and other brush and perform prescribed burns in the Loess Hills area.



Steve Longlee points to where grasses are beginning to come back after being smothered out by eastern red cedar tree duff.

According to Kathy Schneider, district conservationist in Monona County, NRCS targeted the Grant Center WHIP Special Project area for a number of reasons. “Grant Center is one of 12 Special Landscape Areas in the Loess Hills recognized for its quality prairie and unique topographical features,” she said. “In addition, the landowners in that area are dedicated to restoring the declining prairie.

We needed landowner support to make the project work.”

Longlee, who is a farmer and volunteer firefighter, has cleared 56 acres through the Grant Center WHIP Special Project. “With what we’ve cleared, it’s amazing how quickly the native plants and grasses come back after you clear the cedars,” he said. “When the cedars get too thick, it kills the grass because of the duff that comes off the trees.”

To help clear the eastern red cedars from his property, Longlee received \$6,408 in cost-share through the project. Some landowners in Monona County received more than \$30,000 in cost-share funds to remove cedars from as much as 300 acres. “If you want to keep the cedars off these hills, programs like WHIP really help,” said Longlee. “It’s quite cost-prohibitive to clear them on your own.”

Methods for Removing Eastern Red Cedars

Landowners use several methods for clearing the invasive cedars, including prescribed burns, clearing with chainsaws and hiring a contractor to cut them with shears. Longlee sheared cedar trees 30 feet tall with trunks as large as 14

inches in diameter.

“The beauty of using a shear is that you can cut the trees right at ground level; parallel with the ground,” said Longlee. “With a chainsaw, you have to leave a little room.” Longlee used a chainsaw in areas too steep and dangerous for shearing.

He allows the sheared trees to dry out for at least a year. The timing is then right for a prescribed burn, which he believes is a critical step in the prairie restoration process. “I go with a burn every couple of years,” said Longlee. “For every cedar tree you cut, I say there are 10,000 seeds and that’s potentially how many seedlings will come back. Burning is essential.”

As a volunteer firefighter, Longlee said performing the prescribed burns to clear out the eastern red cedars is enjoyable and interesting. He is certified in wildland fire. “Several guys on our department are certified to write their own burn plans,” said Longlee. “We’ve never had any problems (with the fires). We critique the area closely beforehand.”



Bob Madsen

Bob Madsen, also of Hornick, rents his Loess Hills ground for cattle grazing. He cleared 10 acres with shears and a chainsaw and burned another 36 acres with help from the Grant Center

WHIP Special Project. District Conservationist Schneider said it was impressive to see Madsen and his neighbors work together to perform controlled burns. “Firebreaks can’t always be established easily. They need to be used where they occur naturally,” said Schneider. “That is not usually at a property line. We would like to see more cooperation from landowners to form burn units.”

Economic Impact

The invasive cedars have impacted livestock producers in the Loess Hills area. Cattle were removed from Madsen’s Loess Hills pasture for a few years because the grass was too short,



Bob Madsen rents out his Loess Hills property for cattle pasture. He has worked for more than 10 years to clear the eastern red cedars, and says the hills on his property are 90 to 95 percent clear of the invasive tree.

due to the thickness of the cedars. After removing thick areas of cedars, grass has grown back enough that the cattle can graze there once again.

Longlee also used his Loess Hills for pasture before the cedars took over. “Until I get hold of the cedar problem, I see no use in putting livestock back on it,” he said. “It’s quite devastating if you rely on that for income, which we were. I am out of the cattle business now simply because you’ve got to have summer feed for the cows and calves.”

For future use of his ground, Longlee said, “There are a lot of options. I realized some time ago, though, that if we don’t clear the trees, we would have nothing. The first step is to get rid of the eastern red cedar, and then we’ll go from there.”

Partnership Effort

The Grant Center WHIP Special Project grew out of the past efforts of area landowners who were working hard to restore and maintain their native prairie remnants with brush management and prescribed burning. But due to limited WHIP funding, progress came at a much slower pace.

“The Grant Center WHIP Special Project allowed us to base funding on the site, target funds to a prairie conscious community, and allowed best management practices to be implemented landscape wide,” said Maria Sieck, county resource planner for East Pottawattamie County and former soil conservation technician in Monona County. “The project has been essential to maintaining the native prairie for future viability and grazing.”

Now that the Grant Center WHIP Special Project term is up, landowners can turn to partnering agencies and private businesses that provide practice and management assistance, and Schneider says NRCS will continue to offer assistance to project participants and others, so their native resources remain sustainable.

She says the way Madsen and his neighbors conducted prescribed burns are great examples. “Ideally, landowners will work together to maintain and further the efforts put forth with the Grant Center WHIP Special Project,” said Schneider.

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The Loess Hills

Iowa's Loess Hills are unusual because the layers of loess are extraordinarily thick, as much as 200 feet in some places. The extreme thickness of the loess layers and the intricately carved terrain of the Loess Hills make them a rare geologic feature. Shaanxi, China, is the only other location where loess layers are as deep and extensive.

Prairies in the Loess Hills are dominated by little bluestem and side-oats grama on south- and west-facing slopes. Tall grasses like big bluestem and Indian grass are dominant on north- and east-facing slopes and in lowlands. Cool season grasses, such as Junegrass, porcupine grass and Canada wild rye are important as well. Forbs, including many species that are at their eastern-most range limit, such as yucca and skeleton rush, are also found in the Loess Hills.

WHIP

The USDA's Wildlife Habitat Incentives Program helps landowners enhance, protect and develop wildlife habitat on their property. Through WHIP, the NRCS works with landowners to develop wildlife habitat plans and provides cost-share for implementing wildlife habitat management practices. Landowners receive free technical assistance for accessing wildlife habitat needs, making a habitat management plan and implementing practices. Landowners receive 60 percent cost-share for such practices as brush management, prescribed burning, streambank protection and prescribed grazing. Contracts last between 5 and 10 years, depending on the practices installed, and are limited to \$25,000.

Eastern Red Cedar

The eastern red cedar is not a true cedar (genus *Cedrus*). It is actually a variety of juniper. It is native to Eastern North America, where it occurs strongly on limestone derived soils. The plant will survive in moist, deep loam to sand. It becomes invasive if poorly managed or extensively grazed pastures and rangelands.

*Jason Johnson, Iowa NRCS
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